

REMARKS

Applicants have cancelled all previous claims and have added new claims, based on the original specification and claims, to clarify Applicants' invention.

Specifically, new claim 23, based on original claim 1 and descriptions in the specification, is directed to a composite comprising a metallic substrate and a predominately amorphous and hermetic aluminophosphate film in which the film and the substrate are adhered through specified chemical bonds. In the Office Action the Office raised an issue regarding the specificity of the term "substantially" with respect to amorphous and non-porous. Applicant has replaced the original terms with terms taken from the specification. Namely, the amorphous character of the film is described as "predominately amorphous." This term was used in describing an x-ray diffraction pattern of a material of the invention on page 66 of Provisional Application 60/398265, which is incorporated by reference into Applicants' specification. The term "hermetic" was used to describe a property of being substantially non-porous in paragraph 0007, 0042, 0046 and 0051 of the specification. The specific chemical bonds are described in paragraph 0073. Applicant submits that the scope of the new claim does not differ materially from original claim.

Further support for the dependent claims includes the originally filed claims and the specification. New claim 24 is supported by paragraph 92 of the specification and claim 25 by paragraph 0080. 26 is supported in paragraph 0107; claim 27 in paragraph 0103; claims 28-29 in paragraph 0045 and original claims 9 and 10; claim 30 by original claim 4; claims 31-32 by original claims 5 and 6; claim 33 by original claim 7; claim 34 and 35 by original claim 8 and paragraph 0044; claim 36 in paragraph 0060; claim 37 by original claim 22; claim 38 by paragraphs 0103 and as stated for claim 23; claims 39-42 as stated above for claims 25-26, and 28-30.

Applicants note that Figures 11 and 12 as published should be replaced by Figures 35 and 36 as included in Provisional Application 60/398265 to which the present

application claims benefit and which is specifically incorporated by reference into the specification.

The previous Office Action rejected the pending claims 1, 2, 3, and 22 under 35 USC 102(b) over Watanabe (US3709723) and claims 4-8 under 35 USC 103(a) over Watanabe.

Applicants submit that the claims now presented are distinct and not suggested by the descriptions contained in Watanabe. Watanabe is directed to inorganic refractory liquids that are applied to substrates as viscous liquids as a paint or adhesive and then cured at temperatures not exceeding 150 °C (cf. Watanabe col. 2 lines 51-66). Applicants submit that the description in Watanabe is consistent with a thick coating (such as a paint) and does not describe the materials of Applicants that are capable of forming thin "films" as described by Applicants in the micron range of thickness. Applicants further submit that the teaching of Watanabe is consistent with conventional crystalline metal phosphates as discussed in Applicants' specification. In Applicants' belief, a thick material that does not deform or crack at 1000 °C is consistent with a crystalline material (cf. Watanabe Examples 7 and 8). Applicants' claimed composite containing a predominately amorphous film is neither disclosed nor suggested by Watanabe. Thus, new claim 23 is patentable over Watanabe.

The fact that the materials of Watanabe and of the Applicants are different is confirmed in that Watanabe requires a curing temperature for his materials of less than 150 C, while Applicants' materials require higher curing temperatures (cf. par. 0107).

With regard to the submitted dependent claims, Watanabe does not describe or suggest a composite cured at above 300 °C (claims 26 and 41); a composite containing $[\text{—PO}_4\text{—AlO}_4\text{—AlO}_6\text{—AlO}_4\text{—PO}_4\text{—}]$ fragments (claims 27 and 38); a film that is less than 10 microns thick (claims 32 and 33); or a composite containing nanoparticles (claims 28, 29, 39, and 40). As such these claims are patentable over Watanabe.

Applicants wish to bring attention to prosecutions of co-pending related applications to the present application. These are Applications 12/205,208 (and US

Patent 6,461,415); 10/642,069; 10/745,955; 12/005,955; and 11/244,539. Each of these applications is assigned to a common assignee and has at least one common inventor to the present application.

Applicants submit that all claims now presented are in condition for allowance, and respectfully request reconsideration of the rejections made in the Office Action. The Examiner is invited to contact the undersigned by telephone should any issue remain. Thank you for your time and consideration.

Respectfully submitted:

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